

**Patent Application of**

**Barbra Waldare**

**and**

**Candace Modrell**

**TITLE: FLEXIBLE LID WITH OPPOSABLE TABS AND UNIQUE CUTBACK  
SECURING FEATURE**

**CROSS REFERENCE TO RELATED APPLICATIONS: Not Applicable**

**FEDERALLY SPONSORED RESEARCH: Not Applicable**

**SEQUENCE LISTING OR PROGRAM: Not Applicable**

#### **TECHNICAL FIELD OF INVENTION**

The present invention relates generally to a flexible lid comprising opposable tabs to assist in securing and removing the lid from a container. The lid is constructed from a pliable plastic or rubber compound for use on metal containers to slow the oxidation or rust process and to protect other surfaces from damage.

#### **BACKGROUND OF THE INVENTION**

Previously, many types of container bases and lids have been used to solve varying problems incorporating many different designs. Such lids suffer from a number of short

comings and while some lids have been created to alter the base supports to assist in better stacking possibilities or reduce the chance of the container tipping over, other substantial problems have been ignored by the prior art. One such problem is the use of metal containers that are made from metals that are not resistant to moisture and water resulting in rust or other oxidation processes that cause them to deteriorate or damage the surfaces on which they are placed.

U.S. Patent 6,170,696 issued to Tucker, et al. teaches as plastic container lid utilizes a cut-back closure device that maintains the lid in a secure position. The lid also includes gripping tabs on opposable corners to facilitate the separation of the lid from the container.

U.S. Patent 6,511,031 issued to Lin on January 28, 2003 teaches a removable docking station disposed on a coffee mug or liquid container for increasing surface stability. This docking station or base is connected through the use of a male and female cavity system to provide an interlocking connection.

It is also well known that metal cans commonly used in bathroom applications, for example shaving gel cans, are sometimes coated with a chemical that seals the bottom portion of the can. These coatings are typically only applied to the bottom of metal cans and not other exposed portions. The coating acts as a protectant and seals the metal, eliminating its exposure to air, moisture, water, and other corrosive elements.

The method of coating cans has many practical and engineering flaws. From an engineering standpoint, the metal cans used in many household and commercial settings are frequently being moved and having contact with other surfaces. This causes the metal coating to become removed in many small areas due to scratching or other abrasive conditions involved in typical use of a metal container. When the coating is removed, even in small

areas, the metal is then exposed to the environment and will rust with exposure to air, moisture, or water which damages the can and can lead to damage to any surface the can may be resting on or come in to contact with in the future.

As a practical issue, coating metal cans is inconsistently used in the market place. For example, not all manufacturers of shaving gels used or stored in a bathroom environment offer coated metal cans. Additionally, the use of such coatings has not spread to cleaning supplies that are often stored in bathroom environments. Consumers are faced with confusion as to whether their metal container they purchased will rust and if it will cause damage to the surface where it is stored and any surfaces it may come into contact with. The present invention provides a novel solution to this problem. The present invention incorporates a lid that seals the metal container from environmental forces such as air, moisture, and water which may cause it to rust, while also providing an easily identifiable and removable cover to protect the bottom of a metal container, whether it is rusty or not, from the surfaces on which it is placed or which it contacts.

## SUMMARY

The present invention addresses the shortcoming in the prior art with respect to metal containers that are most often used to store cleaning chemicals, hair and body products, foods, and other household and commercial goods. These metal containers often contain a base or bottom portion that consists of exposed, unprotected or treated metal. In a residential situation these containers are often stored in bathrooms, kitchens, or under the sink cabinets that are high moisture environments. When placed in this type of environment, these metal

containers often rust and cause either temporary or permanent damage to the surfaces on which they are placed or those in which they may contact.

The present invention solves this problem by creating a lid that is positioned on the bottom of a container. The lid is made from a flexible plastic or rubber product that cannot rust. One means of connecting the lid to the container is the compression or tension force of placing the flexible lid over a container that is slightly larger in size than the lid in its relaxed position. Additionally, incorporated in to the walls of the lid is a cutback feature that allows the lid to connect to the bottom of a container that consists of a lip or rolled edge. The cutback area creates an interlocking hold on the containers lip or bottom portion in addition to the compression forces previously mentioned and provides for an extra secure attachment to the container. To facilitate removal and attachment of the lid opposable tabs are provided to give the user a better hold on the lid.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 illustrates the well-known design of a typical metal container;

Fig. 2 illustrates the basic construction of the lid;

Fig. 3 illustrates a cross-sectional view of the lid;

Fig. 4 illustrates a cross-sectional view of the cutback feature of the lid;

Fig. 5 illustrates the fit of the lid around the base of a metal container.

## **DETAILED DESCRIPTION OF THE INVENTION**

Fig. 1 illustrates the current, well know, shape of many metal containers typically used to store many personal cleaning products such as shaving cream gel and other chemical cleaning products. A typical metal container is a cylindrical in shape consisting of side walls (100) and top portion (101) that may be designed in a variety of way and include a dispensing means (102) for removing the contents of the container. The container has a side walls (100) that form a bottom portion (103). The bottom portion begins as the side wall flares outward away from the side wall to create a shoulder (104) at the end of the shoulder the sidewall then returns to its regular path and continues for a short distance creating a small side wall ridge (105) that then engages a bottom surface (106) to form the bottom portion of the can (103).

The present invention recognizes this bottom portion configuration that is found on many metal household and commercial containers. The present invention utilizes the shoulder portion of the container by creating a lid that has an interior surface that is constructed in such a manner as to be pliable enough to fit around the container, but then retain is original shape which an inverse design of the container's bottom portion in addition to other features which allow for easier installation and removal of the lid.

Fig. 2 illustrates a view of the lid (200) which shows the basic construction typically comprising a bottom (201), opposable tabs (202) and (203), and a wall (206) comprising an exterior wall surface (204), and an interior wall surface (205). The present invention is embodied in a round design, but can also be created in other shapes such as oval, square, and rectangular. Accordingly, it is intended to embrace all such alternative, modifications, and variations as fall within the spirit and scope of the claims.

Now referring to Fig. 3, a cross sectional view of the invention is shown. The lid (200) is being viewed across its maximum diameter (300) with respect to the tabs (301) and

(302) which are positioned at the exact opposite ends of the maximum diameter (300) of a round lid (200) with a flat bottom (304). Fig. 2 also illustrates the cutback feature of the lid that may be incorporated into the wall (303). The exterior surface (305) of the wall is left unaltered and in a flat and perpendicular orientation to the bottom (304) portion of the lid. The interior wall (306) is formed in such a manner that enable is to grip the bottom of a container that consists of a lip or ridge.

Fig. 4 illustrates a cross sectional view of the cutback feature that is incorporated into an embodiment of the present invention. The lid (200) incorporates a tab (400), flat bottom (304) and wall (303) that are positioned in a perpendicular orientation with respect to the flat bottom (304). The exterior wall (305) remains unchanged. The interior wall (306) does not retain a constant thickness with nor run parallel to the form of the exterior wall (305). The interior wall (306) is shaped in such a manner that is creates various angles and cutback areas for use as a securing mechanism to a container. The interior wall (306) incorporates an angular slope (400) with respect to the exterior wall (305). This slope runs from the opening of the lid (401) toward the bottom (304) away from the exterior wall (305) to a desired depth (402) effectively creating a cone shape for the upper portion of the lid. When the angular slope (300) reaches the desired lid depth (402).

Having establish the angular cone portion of the lid shape required to ease insertion of a container into the lid, Fig. 4 also illustrates the cut back portion that is incorporated into an embodiment of the present invention incorporated to secure the lid and the container together. The cutback portion is created by drastically changing the angular slop of the interior wall (306) at the desired depth (402) point. From the desired depth (402) the interior wall (306) uses a small radial arc (403) to transition the wall from a slope away from the exterior wall

(305) into a slope toward the exterior wall (305). This radial transition (403) is incorporated to allow more flexibility and space for a user to place the lid over a container before the lid is then pushed on and snapped into place on the container. A typical metal container has a rolled bottom portion which creates a lip as illustrated in Fig. 1, the radial transition creates a wider opening which can accommodate the container's rolled lip and allows the lid to be pushed and snapped into place much easier than a lid without the radial transition.

With the radial transition (403) completed the interior wall continues on a straight angular slop (404) toward the exterior wall (305) and bottom of the lid until the next desired depth level (405). Once the desired depth level (405) is reached the interior wall (306) then transitions into it final segment (408) which consists of an interior wall path that is parallel to the exterior wall (305) and ends in another radial transition (406) from interior wall (305) to interior lid bottom (407). The transition from interior wall final segment (408) to interior bottom (407) occurs at a point that is consistent with maintaining the desired minimum wall thickness (409) for both the side wall (303) and bottom (304).

Now referring to Fig. 5, the fit of the lid to a typical metal container in the preferred embodiment is shown. The lid (500) is placed over a container (501) by the user placing the container against the lid and using the tabs (502 and 503) to flex and snap the pliable lid around the bottom portion (103) of the container by pushing the lid on to the container. The previously mentioned inner surface of the lid (504) engages the bottom portion of the container (103) in such a manner that the bottom portion of the container (103) and the inner surface of the lid (504) have interlocking surface regions that provide means for the lid remaining in place on the bottom portion of the container until addition force is applied to forcefully remove the lid from the bottom portion of the container.

In one embodiment the lid is constructed out of such material that it is easily flexible which allows for the use of a lid that may be slightly smaller or larger than the bottom portion (103) of a container. This additional tension force assists the lid in remaining on the container since once pressure used to expand the lid is released the lid will attempt to retain the position of its relaxed state and in the case of a lid that is slightly smaller than the container, the pressure will hold the lid tightly to the sidewalls and bottom portion of the container.

In an embodiment where a lid is produced which is slightly bigger than a container the tension force will allow the lid to be flexible so that it can fit over the bottom portion of container more easily. Although the lid will be able to return to its natural state and no tension force will exist to secure the lid to the can, the unique interior surface design of the lid will provide securing means.

Although the description above contains many specificities, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention. Thus, the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.